FT Servers NEC

NEC \Orchestrating a brighter world

Achieving near-zero downtime is for mission-critical businesses that cannot afford a single moment of failure. NEC Fault Tolerant (FT) servers provide an innovative solution to address planned and unplanned downtime for your most important applications. The FT servers deliver exceptional uptime through dual modular hardware redundancy and help maximize your business outcomes. The servers provide continuous availability through hardware redundancy in all components: Processors, memory, motherboards, I/O, hard disk drives, and cooling fans.

NEC's fault tolerant servers are designed with innovative technology that enables continuous availability for a solution with up to 99.999% system uptime while providing data integrity and exceptional performance.

99.999% system availability;

Availability is the capability of a system to operate continuously. The terms availability and reliability are similar and often used synonymously but they actually are two discrete notions. Reliability refers to the likelihood of failures or the failure-free interval. Availability refers to the uptime provided by a system which is accessible to users. In general, if a system fails often, both reliability and availability are low. However, in a redundant system, high availability is achieved as long as failures do not affect the operation or the users.

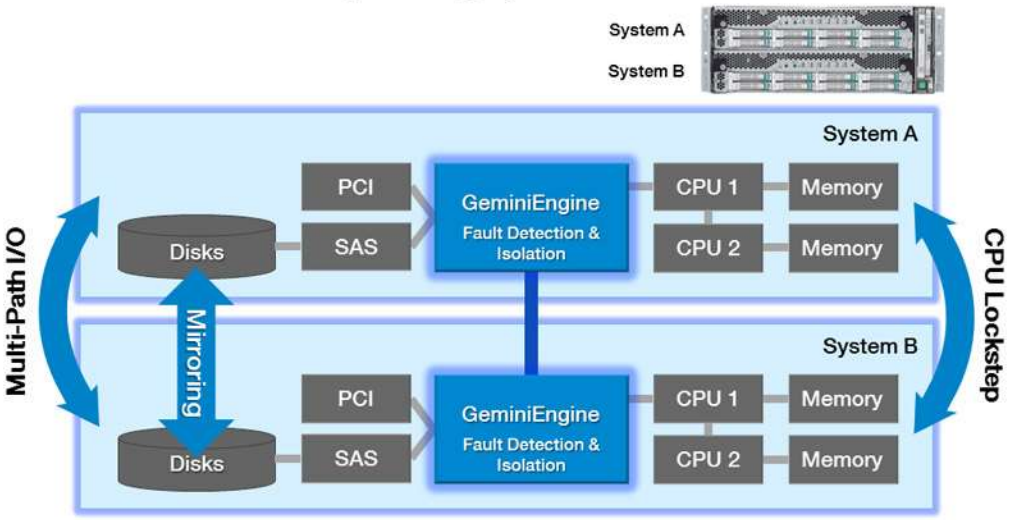
It is often assumed that FT series servers do not fail, but this is not true. Because FT series servers contain the components for two servers, the failure rate is about twice the normal rate. The concept of FT series servers is continuous availability—not to eliminate failures but to enable continuous operation even in the face of failures.

Availability is described in % values.

Availability = Uptime / (Uptime + Downtime)

NEC Express5800/FT series servers deliver a remarkable 99.999% availability4. For a well managed system, this translates into just 5.25 minutes of downtime in a year.

NEC Fault Tolerant (Lockstep) System



GeminiEngine™ — the Heart of Lockstep Processing

The heart of the dual-modular redundancy architecture for the FT server is its GeminiEngine™ chipset, a feature specially engineered to synchronize redundant components and prevent CPU performance degradation due to hardware redundancy control. The GeminiEngine feature enables "lockstep" processing, allowing the redundant components to process the same instructions simultaneously, and thereby eliminating potential failure points for continuous processing.

Rapid Disk Resync (RDR)

The Rapid Disk Resync (RDR) is a disk synchronization technology that enables the disks to be resynchronized in a short period of time when their mirror has been broken due to a system failure or system maintenance. The RDR resumes disk mirroring by performing quick copies of only data changes, rather than entire disk data, thereby minimizing the time that the system runs with non-redundant disk system.

Highest Levels of Availability

NEC Fault Tolerant (FT) servers provide an innovative solution to address planned and unplanned downtime for your most important applications. The Express5800/R320f servers deliver continuous availability for 99.999% system uptime (5 minutes of downtime per year) through its fully redundant modular hardware featuring 14-Core Intel® Xeon® processors that support lockstep operation.

Perfect For Virtualization

The NEC FT servers can deliver continuous availability for Hyper-V by using internal storage and standard management software. Advantages of virtualization with the NEC FT server include proven scalable vCPU performance, integrated high availability storage for CapEX savings, and simplified virtualization deployment for CapEX and OpEx savings.

Simplified Manageability

The Dual Modular Redundant (DMR) design allows easy replacement of major subsystems without shutting down the system, by supporting hot plug of modules. The Customer Replaceable Unit (CRU) is easily replaceable without any special skills. Also, integrated EXPRESSSCOPE Engine 3 technology provides extensive remote management capabilities regardless of the status of the server’s power or operating system.

Concepts of the product include:

Non-stop operation,

Redundant hardware for continuous operation in case of component failures,

Non-disruptive maintenance,

Hot-swappable components to enable replacements without interrupting operation,

General operating systems: General operating systems including Windows® / Linux® / VMware® to deliver the same operability as widely used servers.

These fault tolerant servers are ideal for customers who require to eliminate planned and unplanned downtime for the most important applications.